Completed Pollution Prevention Project Case Study

United States Department of Energy
Office of Environmental Management
Fact Sheet

Dust Suppression with Less Water

Los Alamos National Laboratory

Original Problem

The trucks driving in and out of the waste management facility at TA-54 were creating ruts in the dirt roads as well as dust in the area. Prolonged exposure to this airborne particulate matter is a potential health risk. Water was used in the past to suppress the dust, but this actually caused the road to deteriorate more quickly.

The Project Solution

A commercial product called Soil-Sement® was adopted. By spraying Soil-Sement® on the dirt roads, a hard surface forms for the trucks. Soil-Sement® is a polymer mixture that holds dirt in place and absorbs moisture. In addition to coating dirt roads, Soil-Sement® can also be used for trail maintenance and dust suppression on tailing piles.

Value of Improvement

Instead of spraying water on the roads to control dust almost every day, applying Soil-Sement® to the roads twice a year saves approximately 7 million gallons of potable water each year since water only has to be sprayed on the roads once a week instead of every day. The amount of labor involved with maintenance of the dirt roads has decreased by about 75%. The dirt roads remain in much better condition because they are not used when they are wet and dust from the roads does not escape into the air. The smoother roads in turn create less wear on the vehicles.

Lifecycle Waste Reduction	
Lifecycle Waste Reduction	7 million gallons potable water / year
Commencement Date	2001
Project Useful Life (Years)	Indefinite

DOE Monetary Benefits	
Total Project Cost	~$4000 / year
Lifecycle Savings	~$30,000 / year
Return on Investment	NA

Benefits At-A-Glance

- About 7 million gallons of potable water are saved annually, reducing costs by approximately $30,000 per year.
- Less dust is released into the atmosphere, reducing the particulate matter load and improving air quality.
- The dirt roads remain in better condition since they are not driven on when wet and because much less dust is released from the roads over time. The roads only need to be sprayed with water once a week instead of every day, reducing maintenance time by about 75%.

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Summary Data	
Priority Area:	Waste Minimization Projects
Project Type:	Resource Conservation
Total Project Cost:	~$4000 per year
Lifecycle Savings:	~$30,000 per year
Implementing Group:	FWO
Benefiting Group:	FWO
Useful Life Years:	Indefinite
Return on Investment:	NA
Lifecycle Waste Reduction:	~7,000,000 gallons of potable water every year
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